

The Genus *Sicyos* (Cucurbitaceae) on the Hawaiian Leeward Islands Hawaiian Plant Studies 35¹

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TO THE NORTHWEST of the island of Kauai in the main group of Hawaiian Islands, there is a line of small islands stretching 1,370 nautical miles towards Japan. The further ones, from Laysan to Kure (Ocean), are atolls. The nearer ones have a core of volcanic rock. Gardner Island has two volcanic islets, the larger one 170 feet high, but no emerged reef. French Frigates is an atoll, but it encloses two rock islets, the larger one 120 feet tall. Necker Island is a volcanic cone 276 feet high, rising from a submerged bank. Nihoa Island rises sheer from a 20 × 11-mile bank submerged 20 to 40 fathoms. It has two peaks, one 852 feet high, the other 895 feet high, and bears a good vegetation, and even has groves of an endemic palm tree.

Various explorations have been made of these Leeward Islands, and their flora is quite well known. Of course, on their shores, and on the atolls, both on shores and inland, there are found halophytic or psammophytic plants, most of which are widely distributed. The native ones are *Cenchrus agrimonoides* Trin. var. *laysanensis* F. Br., *C. echinatus* L. var. *Hillebrandianus* (Hitchc.) F. Br., *Eragrostis Whitneyi* Fosb. var. *Caumii* Fosb., *Lepturus repens* (Forst. f.) R. Br., *Sporobolus virginicus* (L.) Kunth, *Cyperus laevigatus* L., *C. pennatifolius* Kuekenh. var. *Bryanni* Kuekenh., *Santalum ellipticum* Gaud., *Acyranthes splendens* Mart. var. *reflexa* Hbd., *Boerhavia diffusa* L., *Sesuvium Portulacastrum* (L.) L., *Portulaca lutea* Soland., *P. villosa* Cham., *Lepidium o-waihiense* C. & S., *Capparis sandwichiana* DC. var. *Zobaryi* Deg. & Deg., *Tribulus cistoides* L., *Ipomoea brasiliensis* (L.) Sweet, *Nama sandwichensis* Gray var. *laysanicum* Brand, *Heliotropium curassavicum* L., *Phyllostegia variabilis* Bitter, *Sicyos* spp., *Scaevola Taccada* (Gaertn.) Roxb., and *Lipochaeta integrifolia* (Nutt.) Gray.

There are other species that occur both on the sand flats of atolls and upland on the volcanic islands. They include *Eragrostis variabilis* (Gaud.) Steud., *Chenopodium oahuense* (Meyen) Aellen, f. *microspermum* Aellen, *Sesbania tomentosa* H. & A., *Sida fallax* Walp., *Ipomoea congesta* R. Br., and *Solanum Nelsoni* Dunal.

Most interesting of all are the strictly upland plants which are deemed remnants of the larger flora that inhabited these volcanic islands when their peaks were taller and larger. They include *Panicum torridum* Gaud., *Pritchardia remota* Becc., *Rumex giganteus* Ait., *Amaranthus Brownii* Christoph. & Caum, *Alsinodendron verticillatum* (F. Br. in Christoph. & Caum) Sherff, and *Euphorbia celastroides* Boiss. var. *celastroides*.

As evident relics of a larger upland flora in ages past, the most interesting of these are *Pritchardia*, *Rumex*, *Amaranthus*, *Alsinodendron*, *Euphorbia*, and *Phyllostegia*.

The dispersal agents for nearly all of the native plants seem to be sea flotation or bird carriage. None seem to be wind carried.

There are also a few adventive species on these islands, but they are not listed or discussed here.

Sicyos ON THE LEEWARD ISLANDS

Most of the species of *Sicyos* endemic to the principal Hawaiian Islands are upland species, growing in areas well removed from the sea shore and its influences. Only one, *S. microcarpus* Mann, does occur close to the ocean, and on Oahu on the leeward shores it is common on coral flats and sandy shores, but also is common and much more vigorous on the lower and middle slopes of the Waianae Mountains. In 1931 Christophersen and Caum (1931, pp. 37-38) recognized three species of *Sicyos* on these islands, but now the number is raised to six. Five are considered distinct from the species of the main islands, but one also occurs on Oahu.

¹ Manuscript received January 21, 1970.

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They are found on all but three of the Leeward Islands, and extend to the furthest one, Kure. Of the remaining five species, two occur on two islands, and three only on a single island. On Laysan there are three species, and on Kure two. All these islands are nesting sites of multitudes of sea birds. Evidently the birds have carried fruits of *Sicyos* from one island to another, as all of the species in that area have glands or viscid hairs on their fruits, and the fruits are small, light, and easily portable.

Sicyos laysanensis sp. nov. (sect. *Sicyos*)

Fig. 1

NOM. VERN.: "white blossom."

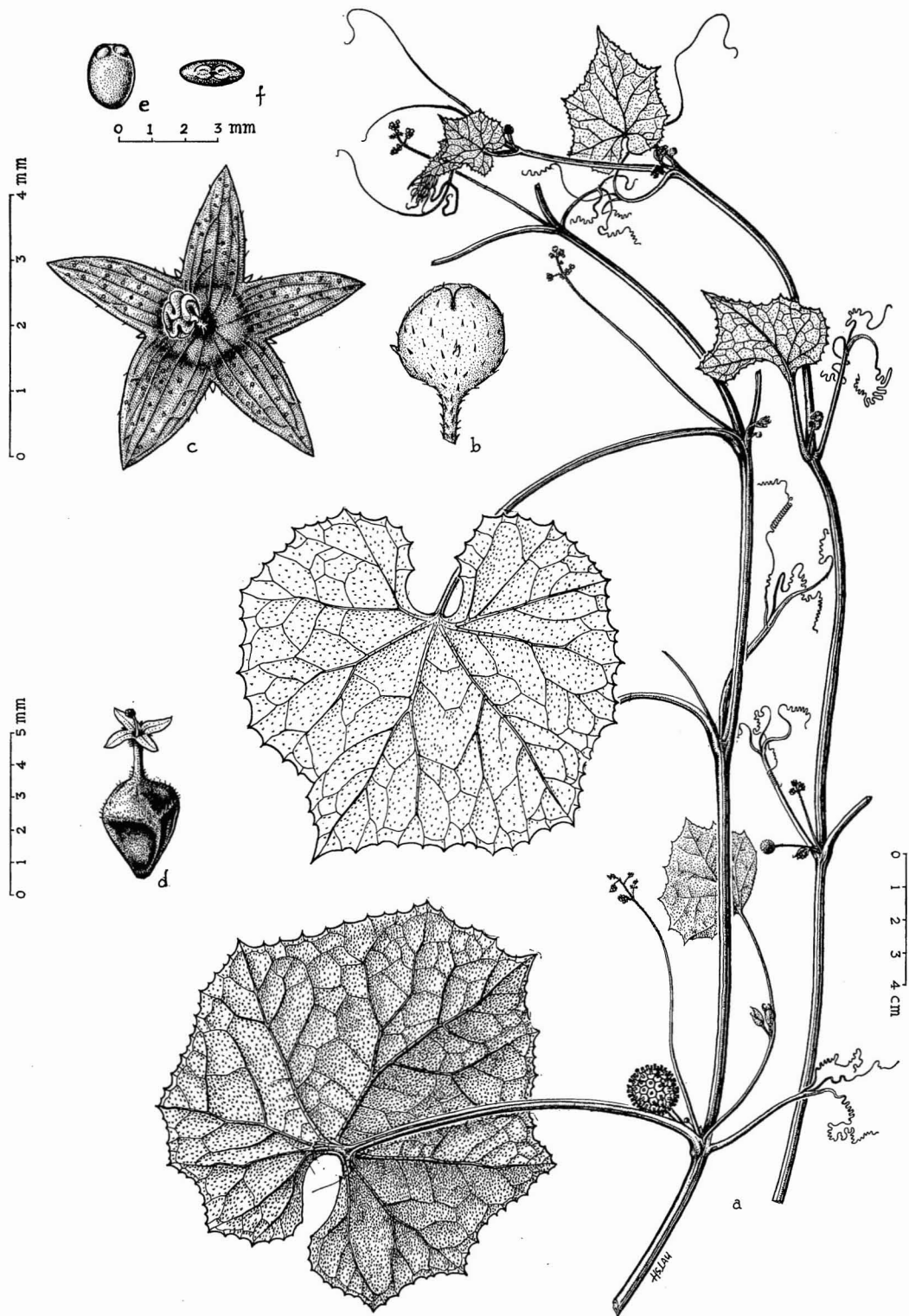
DIAGNOSIS HOLOTYPE: Liana herbacea est, novellis remote hispidulis sed mox glabratiss longitudinaliter costatis, caulibus subviridibus ad stramineis, internodis 7–12 cm longis, cirrhis in nodis lateralibus trifurcatis pedunculo 2–3.5 cm longo furcis gracilibus in spiris, petiolis 4–11 cm longis sparse hirsutulis, laminis 8–12.5 cm longis 8–11.5 cm latis profunde cordatis orbicularibus minute palmatis 5–7-lobatis lobis fere 1/15 ad centrum extensis sinibus latis vadosis 3–5 mm profundis apice acuto marginibus

vadoso irregulariter dentatis et dentibus ex venulis excurrentibus mucronatis sinu basali U-formati laminis chartaceis vel submembranaceis supra obscure viridibus crebre pustulatis scabris infra pallide viridibus et valde pustulate albi-scabris et paucis majoribus breviter pustulatis hispidulis, paniculis masculis 6–10 cm longis supra hirsutulis infra sparse ita, pedunculo 4–9 cm longo, pedicelis 2–4 mm longis filiformibus, alabastris 1.3–1.5 mm diametro globosis subluteis sparse hispidulis, lobis calycis 0.2 mm longis subulatis, perianthiis in flore 5 mm diametro rotatis albis tubo 0.8 mm in radio, lobis 5 et 1.8–2 mm longis 0.9–1.2 mm latis intra capitate glandulose puberulis 4 lobis minoribus simulantibus uno majori, columna staminalis 0.5–0.7 mm longis, 3 antheris 1–1.6 mm longis curvatis, inflorescentiis foemineis 1.5–3 cm longis in nodis lateralibus solitariis vel cum 1–2 masculis, pedunculo 13–18 mm longo sparsim piloso, floribus foemineis fere 80 in capitula ea in flore 5–7 mm diametro in fructu 15 mm diametro, corolla epigyna 2.2 mm diametro rotata extra proxima basem remote puberula intra glandulosa-atomifera, tubo 0.2 mm diametro ad basim et ad apicem hispidulo, 4 lobis 0.9 mm

KEY TO *Sicyos* SPECIES

- A. Fruits entire, with simple hairs; young shoots glabrous or glabrate, (sect. *Sicyos*)
 - B. Seed 3 mm long; leaves 3.5–5.8 cm wide, stellately 5–7-lobed; young shoots glabrous. Nihoa. *S. nihoaensis*
 - B. Seed 1.8–2.5 mm long; leaves 8–11.5 cm wide, scarcely lobed; young shoots remotely hispidulous, glabrate. Laysan, Oahu. *S. laysanensis*
- A. Fruit with long, hairy, elongate, branch-like projections; young shoots pilosulous to hirsute or villous, (sect. *Cladocarpa*)
 - C. Fruit 6–7 mm long; seed 4.2 mm long; staminate corolla lobes elliptic, acute; tendril 3-forked. Lisianski, Kure. *S. Lamoureuxii*
 - C. Fruits 10–13 mm long; seed 4–7 mm long; staminate corolla lobes ovate, acute,
 - D. Fruit lobes densely hirsute,
 - E. Seed 5 mm wide, 6.5–7 mm long; pistillate flower sparsely hirsutulous without; tendrils 3–5-forked. Pearl and Hermes. *S. Caumii*
 - E. Seed 4 mm wide, 7 mm long, narrowly ellipsoid; pistillate flowers glandular puberulent throughout; tendrils 3–4-forked. Kure, Laysan. *S. atollensis*
 - D. Fruit lobes sparsely short hirsutulous; seed 6 × 4.2 mm; tendrils 4–5 forked. Laysan. *S. semitonsus*

FIG. 1. *Sicyos laysanensis* St. John, from holotype. a, Flowering branch and young shoot, × 1/2; b, staminate bud, × 10; c, staminate flower, × 10; d, fruit and pistillate flower, × 5; e, seed, lateral view, × 5; f, seed with hilum. apical view, × 5.



longis 0.3 mm latis oblongi-ellipticis acutis, stylo 2 mm longo glabro, lobis stigmatis tribus 0.4–0.5 mm longis linearibus, anthocarpiis 4–6 mm longis 2.5 mm latis dimidio supero libero pilosulo corpore 3–3.5 mm longo late obovoideo anguloso compresso prope seminem chartaceo rostro gracili 1.5–2 mm longo, semine 1.8 mm longo 1.4 mm lato 0.8 mm crasso ellipsoideo compresso brunneo laevi, hilo 0.8 mm longo elevato cartilagineo stramineo jugis labiis aperitis in linea simulanti.

DIAGNOSIS OF HOLOTYPE: Herbaceous vine; the young shoots remotely hispidulous, soon glabrate; stems greenish to stramineous; internodes 7–12 cm long; tendril lateral to the petiole base, 3-forked, glabrous, the stalk 2–3.5 cm long, the slender forks spiralling; petioles 4–11 cm long, sparsely hirsutulous; blades 8–12.5 cm long, 8–11.5 cm wide, deeply cordate orbicular, perceptibly palmately 5–7-lobed, but the lobes extending only about 1/15 way to the center, the broad shallow sinuses 3–5 mm deep, the apex acute, the margin shallowly irregularly dentate and each tooth mucronate by an excurrent veinlet tip, the basal sinus U-shaped, texture chartaceous to almost membranous, above dark green, abundantly pustulate scabrous, below pale green and abundantly white pustulate scabrous and with a few larger ones pustulate short hispidulous; staminate panicles 6–10 cm long, hirsutulous above, sparsely so below; peduncle 4–9 cm long; pedicels 2–4 mm long, filiform; buds 1.3–1.5 mm in diameter, globose, yellowish sparsely hispidulous; calyx lobes 0.2 mm long, subulate; perianth in anthesis 5 mm in diameter, rotate, white, the tube 0.8 mm in radius, the five lobes 1.8–2 mm long, 0.9–1.2 mm wide, capitate glandular puberulous within, four of them smaller and alike, one larger; staminal column 0.5–0.7 mm long; the 3 anthers 1–1.6 mm long, spirally curved; pistillate inflorescences 1.5–3 cm long, solitary in an axil or together with 1–2 staminate ones; peduncle 13–18 mm long, sparsely pilose; pistillate flowers about 80 in a head, this 5–7 mm in diameter in flower, but 15 mm in diameter in fruit; corolla epigynous, 2.2 mm in diameter, rotate, without sparsely puberulous near the base, within glandular atomiferous; the tube 0.2 mm in diameter, hispidulous at base and summit, the 4 lobes 0.9 mm long, 0.3 mm wide, oblong ellip-

tic, acute; style 2 mm long, glabrous; stigma lobes 3, linear, 0.4–0.5 mm long; anthocarps 4–6 mm long, 2.5 mm wide, the exposed upper half pilosulous, the body 3–3.5 mm long, broadly obovoid, angled and compressed, chartaceous next to the seed, the slender beak 1.5–2 mm long; seed single 1.8 mm long, 1.4 mm wide, 0.8 mm thick, ellipsoid, compressed, the testa brown, smooth, the hilum 0.8 mm long, raised, cartilaginous, stramineous, shaped like two pairs of open lips in a line.

EXPANDED DESCRIPTION: Blades 5–12 cm wide; staminate panicles 3.5–10 cm long, the peduncle 3–9 cm long; anthocarps about 35–80 in a head; the body 3–4 mm long, the beak 1–2 mm long; seed 1.8–2.5 mm long.

HOLOTYPE: Hawaiian Leeward Islands, Laysan Island, May 1911, *W. A. Bryan*, no. A (BISH).

SPECIMENS EXAMINED: Hawaiian Leeward Islands, all from Laysan Island, June 1962, *J. W. Beardsley* (BISH); on sand and guano, not abundant, April 1903, *W. A. Bryan* (BISH); s. end of island, prostrate in dark sand, 1 m alt., July 25, 1959, *C. W. Daniel* 18 (BISH), and July 26, 1959, 32, and 33 (BISH); ditto, n. w. end of lagoon, in flat with *Ipomoea*, Sept. 19, 1964, *C. R. Long* 2,370, and 2,372 (Univ. Hawaii); prostrate on sandy substratum on s. side of island about 50 m from lagoon's edge, Dec. 5, 1963, *R. Tsuda* 502 (BISH); ditto, s. e. shore of lagoon, growing over *Cyperus*, *Eragrostis*, *Scaevola*, and *Ipomoea*, Sept. 17, 1964, *A. L. Young* 156 (Univ. Hawaii).

Hawaiian Islands: Oahu Island, between Barbers Point and Pearl Harbor, May 8, 1932, *O. Degener* 18,394 (BISH); Ewa Plantation, on cultivated land, Jan. 23, 1952, *J. B. Menardi* (BISH); Honolulu, Damon Tract, in abandoned housing area, in coral rock, dry, 2 ft alt., April 3, 1959, *G. A. Pearsall* 331 (BISH).

DISCUSSION: *S. laysanensis* is a member of the section *Sicyos*, as is its closest relative, *S. nihoaensis* a species with the staminate panicles 1–3.5 cm long, glabrous; staminate buds 1.5–2 mm in diameter; pistillate flowers 18–30 in a head 15 mm in diameter; pistillate corolla 3.1 mm in diameter, the lobes 0.5–0.7 mm wide; anthocarp body 4–5 mm long; seed 3 mm long,

suborbicular, compressed; petioles 1.5–3.3 cm long; blades 3–4.7 cm long, below short hispidulous from pustulate bases. *S. laysanensis* has the staminate panicles 6–10 cm long, hirsutulous; staminate buds 1.3–1.5 mm in diameter; pistillate flowers 80 in a head 5–7 mm in diameter; the corolla 2.2 mm in diameter, the lobes 0.3 mm wide; anthocarp body 3–3.5 mm long; seed 1.8 mm long, elliptic, compressed; petioles 4–11 cm long; blades 8–12.5 cm long, below abundantly white pustulate scabrous, or with a few of the larger spots pustulate short hispidulous.

The new species is certainly also a close relative of *S. microcarpus* Mann, of Oahu, but that species has the young shoots white puberulous, and the older stems sparsely so; tendrils 2–3-forked, sparsely white puberulous; staminate pedicels 1–2.5 mm long; calyx lobes wanting; staminal column 1 mm long; anthers 0.5–0.6 mm long; pistillate flowers 25–40 to a head, the corolla 4.7 mm in diameter, the lobes 1.2–1.5 mm long; style 1.3 mm long; anthocarp upper part puberulous, the beak 0.5–1 mm long; seed 2–2.5 mm long. *S. laysanensis* has the young shoots remotely hispidulous, soon glabrate; tendrils 3-forked glabrous; staminate pedicels 2–4 mm long, the calyx lobes 0.2 mm long, subulate; anthers 1–1.6 mm long; staminal column 0.5–0.7 mm long; pistillate flowers 80 to a head, the corolla 2.2 mm in diameter, the lobes 0.9 mm long; style 2 mm long; anthocarp upper part pilosulous, the beak 1.5–2 mm long; seeds 1.8 mm long.

The new epithet is formed from the name of the type locality, Laysan Island, and *-ensis*, the Latin adjectival place ending.

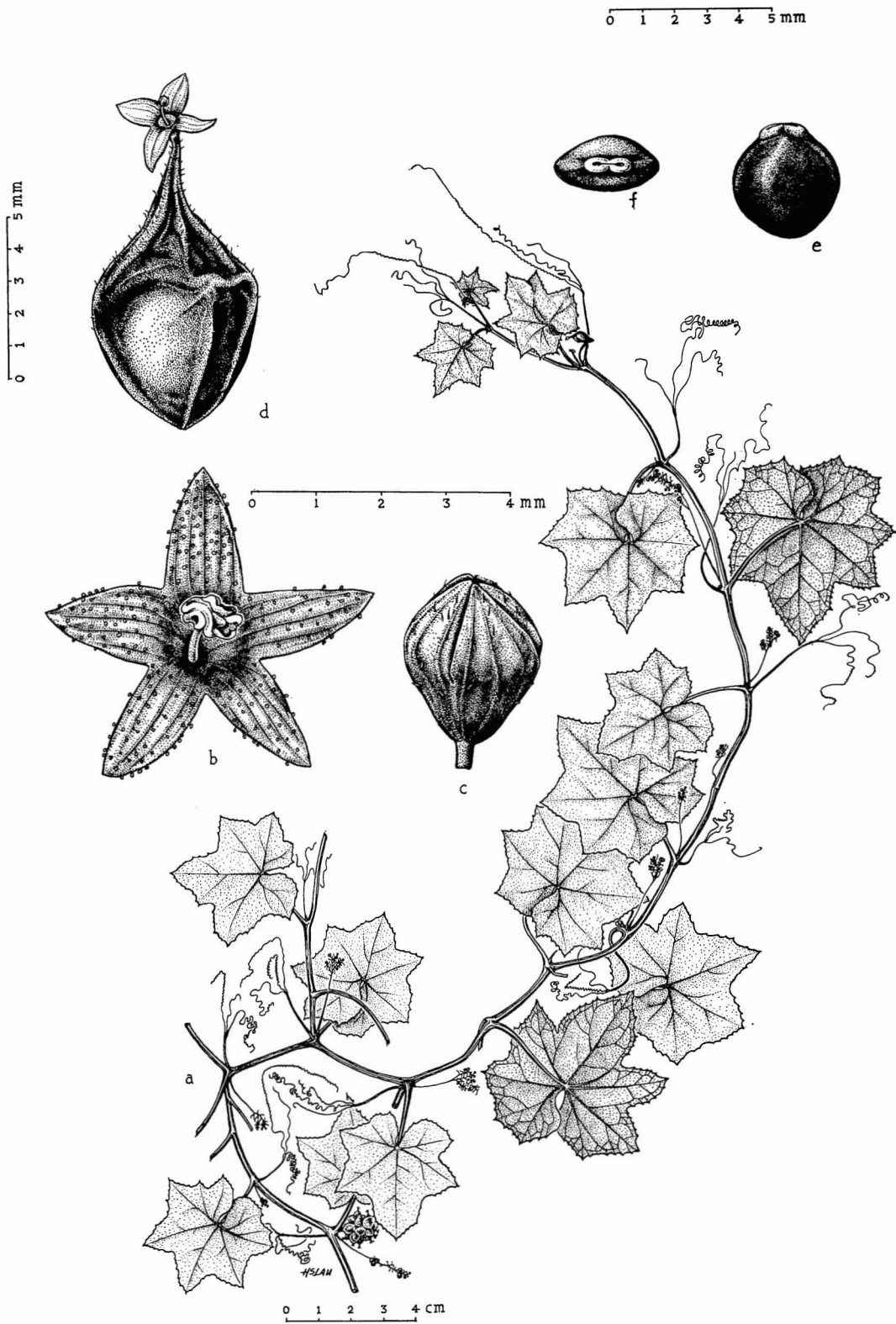
Sicyos nihoaensis sp. nov. (sect. *Sicyos*)

Fig. 2

DIAGNOSIS HOLOTYPE: Liana herbacea repens est, caulibus 1.5–2 mm diametro stramineis glabris cum fugis longitudinalibus, novellis glabris, internodis 1.3–4.3 cm longis, cirrhis in nodis lateralibus 2–3-furcatis glabris pedunculo 15–22 mm longo furcis gracilibus in spiris, petiolis 1.5–3.3 cm longis glabris, laminis 3–4.7 cm longis 3.5–5.8 cm latis suborbicularibus profunde cordatis palmatis 5- vel 7-lobatis lobis 2/5–3/7 ad centrum extensis sinibus 11–15 mm profundis late V-formatis apice acuto sinu ba-

sali profundo anguste V-formato sed lobis occulosis marginibus vadose duplodenticulatis et dentibus mucronatis ex apicibus nervis excurrentibus laminis subtiliter chartaceis supra obscure viridibus et acute scabri-pustulatis albis infra pallide viridibus et breviter hispidulis ex basibus pustulatis, paniculis masculis 1–3.5 cm longis glabris, pedunculo 5–26 mm longo filiformi, pedicelis 1–4 mm longis filiformibus, alabastris 1.5–2 mm diametro elliptici-subglobosis subluteis infra glabris supra sparse puberulis, lobis calycis nullis, perianthio in flore 5 mm diametro albo rotato intra glabro tubo 1 mm in radio, 5 lobis 1.8–2 mm longis 0.9–1.2 mm latis ellipticis acutis inaequalibus, columna staminalis 0.7 mm longa cum 3 antheris 0.5 mm longis curvatis, inflorescentiis foemineis cum pedunculo 7–10 mm longo glabro ex nodo laterali, floribus foemineis 18 in capitula, capitula in fructu 15 mm diametro, perianthio epigyno 3.1 mm in diametro rotato tubo 1 mm diametro, 4 (vel 3) lobis 1.2–1.3 mm longis 0.5–0.7 mm latis ellipticis vel anguste ellipticis acutis, stylo 0.7 mm longo glabro, lobis stigmatibus in apice capitato 0.2 mm diametro, anthocarpiis 6.5 mm longis 3–4 mm latis corpore 4–5 mm longo late ellipsoideo partibus inferis contiguis glabris chartaceis parte libera et rostro 2 mm longo sparse puberulis, semine 3 mm longo 2.3–2.7 mm lato 0.8 mm crasso suborbiculari compresso brunneo laevi, hilo 1.7 mm longo elevato cartilagineo stramineo jugis binis labiis in linea simulantibus.

DIAGNOSIS OF HOLOTYPE: Herbaceous trailing vine; stems 1.5–2 mm in diameter, stramineous, glabrous, longitudinally ribbed; young shoots glabrous; internodes 1.3–4.3 cm long; tendril lateral to the petiole base, 2–3-forked, glabrous, the stalk 15–22 mm long, the slender forks spiralling; petioles 1.5–3.3 cm long, glabrous; blades 3–4.7 cm long, 3.5–5.8 cm wide, suborbicular, deeply cordate, palmately 5- or 7-lobed, the lobes extending 2/5–3/7 way to the center, the broad V-shaped sinuses 11–15 mm deep, the apex acute, the basal sinus deep, narrowly V-shaped, but closed by the overlapping lobes, the margins shallowly doubly denticulate and each tooth mucronate by an excurrent veinlet tip, texture thin chartaceous, above dark green and white acute scabrous pustulate, below pale green and short hispidulous



from pustulate bases; staminate panicles 1–3.5 cm long, glabrous; peduncle 5–26 mm long, filiform; pedicels 1–4 mm long, filiform; bud 1.5–2 mm in diameter, elliptic-subglobose, yellowish, glabrous below, sparsely puberulous above; calyx lobes wanting; perianth in anthesis 5 mm in diameter, white, rotate, glabrous within, the tube 1 mm in radius, the five lobes 1.8–2 mm long, 0.9–1.2 mm wide, elliptic, acute, unequal; staminal column 0.7 mm long, the 3 anthers 0.5 mm long, spirally curved; pistillate inflorescence on a glabrous peduncle 7–10 mm long, lateral at a node together with a staminate one; pistillate flowers 18 in a head, this 15 mm in diameter in fruit; perianth epigynous, 3.1 mm in diameter, rotate, the tube 1 mm in diameter, the 4 (or 3) lobes 1.2–1.3 mm long, 0.5–0.7 mm wide, elliptic or narrowly so, acute; style 0.7 mm long, glabrous; stigma lobes forming a 0.2 mm capitate apex; anthocarps 6.5 mm long, 3–4 mm wide, the body 4–5 mm long, broadly ellipsoid, the contiguous parts glabrous, chartaceous next to the seed, the free part and the 2-mm beak sparsely puberulous; seed single, 3 mm long, 2.3–2.7 mm wide, 0.8 mm thick, suborbicular, compressed, the testa brown, smooth; the hilum 1.7 mm long, elevated, cartilaginous, stramineous, shaped like two pairs of lips in a line.

EXPANDED DESCRIPTION: Internodes 1.3–6 cm long; blades 3–7.5 cm long, 3.5–9 cm wide; pistillate peduncle 7–20 mm long; pistillate flowers 18–30 in a head, this 12–15 mm in diameter; fruits 6.5–8.5 mm long, the beak 2–3 mm long.

HOLOTYPE: Hawaiian Leeward Islands, Nihoa Island, w. slope of Tanager Peak, on *Chenopodium sandwichicum*, 200 m elev., July 12, 1924, E. Christophersen & T. Dranga 9 (BISH).

SPECIMENS EXAMINED: Hawaiian Leeward Islands, Nihoa Island, 700 ft alt., June 10, 1962, J. W. Beardsley (BISH); ditto, Dec. 12, 1961, R. J. Kraemer & G. Svedberg 4 (Univ. Hawaii); ditto, Basin, seaward between Middle, and East Palm Valleys, 150 ft alt., May 1969, D. Yen 1,006 (BISH).

DISCUSSION: *S. nihoaensis* is a member of the section *Sicyos*, as is its closest relative, *S. microcarpus* Mann, of Oahu, a species with the staminate buds 2.2 mm in diameter; seed 2.5 mm long, narrowly ellipsoid; anthocarp free, upper part and beak abundantly pilosulous, and less so on the angles of the contiguous parts; blades 5–25 cm long, thin membranous, the basal sinus widely U-shaped, below papillose. *S. nihoaensis* has the staminate buds 1.5–2 mm in diameter; seed 2.3–2.7 mm long, suborbicular; anthocarp contiguous parts glabrous, the free upper part and the beak sparsely puberulous; blades 3–4.7 cm long, thin chartaceous, the deep basal sinus closed by the overlapping lobes, below short hispidulous from pustulate bases.

The new epithet is formed from the name of the type locality, Nihoa Island, and *-ensis*, the Latin adjectival place ending.

Section *Cladocarpa* sect. nov.

Antherae 3 vel 5 spirales sunt, fructibus lignosis lanceoloideis ad obovoideis et cum projectionibus ramiformibus rigidis pubescentibus lateribus arte seminem incudentibus.

Anthers 3 or 5, spiral; fruit woody, lanceoid or obovoid, the thick pericarp closely investing the seed, the surface with numerous branch-like, long hairy projections.

HOLOTYPE: *Sicyos niibauensis* St. John, Pacific Sci. 13, pp. 175–177, fig. 7, 1959, Hawaiian Islands.

Other species in this new section are: *S. atollensis* St. John, *S. Caumii* St. John, *S. hispidus* Hbd., *S. Lamoureuxii* St. John, *S. Maximowiczii* Cogn., and *S. semitonsus* St. John.

Cogniaux (1881, p. 898) placed *S. microcarpus* Mann in the section *Sicyocarpa*, but on account of its small fruits with loose, thin pericarp, he should have put it in section *Sicyos* (his *Eusicyos*). His section *Sicyocarpa*, which he attributed to Gray, was merely an invalid orthographic variant of section *Sicyocarya* (Gray) Gray (1854, p. 649).

Cogniaux (1881, p. 895) placed his new *S. Maximowiczii* in his section *Sicyocarpa*, which

FIG. 2. *Sicyos nihoaensis* St. John, from holotype. a, Flowering branch, $\times \frac{1}{2}$; b, staminate flower, $\times 10$; c, staminate bud, $\times 10$; d, fruit and pistillate flower, $\times 5$; e, seed, lateral view, $\times 5$; f, seed with hilum, apical view, $\times 5$.

action at that time was logical. Now, because of the long hairy lobes of the fruit, it is assigned to the section *Cladocarpa*.

The new name is formed from the Greek words *klados*, branch, and *karpós*, fruit, and it is given with reference to the branch-like lobes of the fruit.

Sicyos atollensis sp. nov. (sect. *Cladocarpa*)

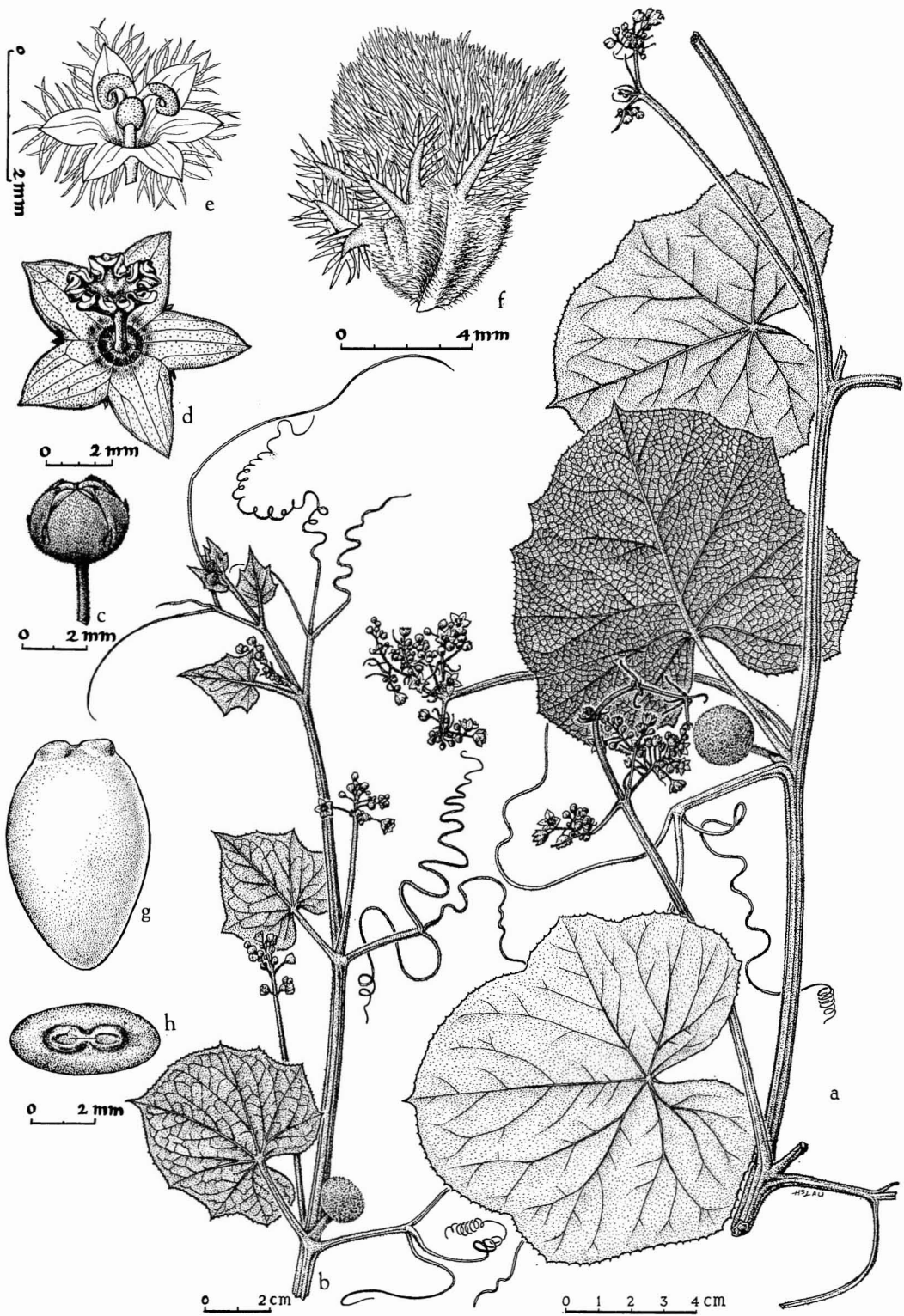
Fig. 3

DIAGNOSIS HOLOTYPE: Liana herbacea procumbens vel scandens est, novellis viscidis et capitata glandulose villosis catenulatis, caulibus maturis stramineis vel subrubris viscidis et sparse villosis, internodis 7–12.5 cm longis, cirrhis in nodis lateralibus 3–4-furcatis, pedunculo 17–40 mm longo compresso plurianguloso capitata glandulose villosa catenulato furcis gracilibus elongatis et pilosis, petiolois 3.5–4.5 cm longis crebre glandulose hirsutis catenulatis, laminis 7.5–9 cm longis 8–10 cm latis reniformibus vadosae palmatis 5-lobatis lobis $1/5$ – $1/10$ ad centrum extensis sinibus latis vadosis 5–11 mm profundis apice subacuto sinu basali anguste V-formati vel ocluso marginibus ex apicibus excurrentibus umbonatis venularum denticulatis texture gracile chartacea vel membranacea supra obscure viridibus crebre minute glandulose hirsutulis infra capitata glandulose hirsutulis et in nervis grosse ita, paniculis masculis 5.5–18 cm longis capitata glandulose hirsutis catenulatis, pedunculo 4–11.5 cm longo, pedicelis 3–8 mm longis filiformibus, alabastris 3 mm diametro oblate globosis densiter puberulis, lobis calycis 0.5 mm longis subulatis, floribus masculis luteis, perianthio in flore 7.5 mm diametro rotato intra glandulose punctato tubo 1.5 mm in radio lobis corollae 5 subaequalibus 2.2–2.5 mm longis ovatis acutis 3–5-nervosis, columna staminalis 1.3 mm longa glabra in apice expansa et infundibuliformi cum 5 antheris 0.8 mm longis curvatis, flore foeminea epigyna in pilis villosis ovarii semihumati extra sparse puberulo 3.5 mm diametro rotato intra glabro cum 6 lobis 1 mm longis 0.5 mm latis, stylo 0.8 mm longo, 3 lobis stigmatis 0.8 mm longis cernuis.

DIAGNOSIS OF HOLOTYPE: Herbaceous vine, trailing or climbing; young shoots viscid and also capitate glandular catenulate villous; mature stems stramineous to reddish, and similarly viscid and sparsely villous; internodes 7–12.5 cm long, tendril lateral to a petiole base, 3–4-forked, the stalk 17–40 mm long, flattened, several-angled, capitate glandular catenulate villous, the slender elongate forks spiralling and similarly pilosulous; petioles 3.5–4.5 cm long, densely glandular catenulate hirsute; blades 7.5–9 cm long, 8–10 cm wide, reniform, shallowly palmately 5-lobed, the lobes extending $1/5$ – $1/10$ way to the center, the broad shallow sinuses 5–11 mm deep, the apex subacute, the basal sinus narrow V-shaped or closed by overlapping lobes, the margin denticulate by excurrent umbonate veinlet tips, texture thin chartaceous to membranous, above dark green, densely minute capitate glandular hirsutulous, below capitate glandular hirsutulous and shaggy so on the veins; staminate panicles 5.5–18 cm long, capitate glandular catenulate hirsute; peduncle 4–11.5 cm long; pedicels 3–8 mm long, filiform; bud 3 mm in diameter, oblate globose, closely puberulous; calyx lobes 0.5 mm long, subulate; staminate flowers yellow, perianth in anthesis 7.5 mm in diameter, rotate, within glandular dotted, the tube 1.5 mm in radius; 5 corolla lobes subequal, 2.2–2.5 mm long, ovate, acute, 3–5-nerved; staminal column 1.3 mm long, glabrous, the apex expanded and funnelform, with 5 curving anthers 0.8 mm long; pistillate inflorescence 2–2.5 cm long; peduncle 1.3–1.5 cm long, villous; pistillate flowers epigynous, half buried in the villous hairs of the ovary, 3.5 mm in diameter, rotate, glabrous within, glandular puberulent without, the 6 elliptic lobes 1 mm long, 0.5 mm wide; style 0.8 mm long; the 3 stigmatic lobes 0.8 mm long, cernuous.

EXPANDED DESCRIPTION: Petioles 3.5–11 cm long; blades 7.5–12 cm long, 8–16 cm wide, the lobes 5–22 mm deep, the basal sinus U-shaped to V-shaped; staminate panicles 5.5–23 cm long; peduncle 4–14 cm long; anthocarps

FIG. 3. *Sicyos atollensis* St. John, from holotype. *a*, Flowering branch, $\times 1/2$; *b*, young shoot, $\times 1/2$; *c*, staminate bud, $\times 5$; *d*, staminate flower, $\times 5$; *e*, pistillate flower, $\times 10$; *f*, anthocarp, $\times 5$; *g*, seed, lateral view, $\times 5$, from 6/15/62, Beardsley; *h*, seed with hilum, apical view, $\times 5$, from 6/15/62, Beardsley.



10–13 mm long, 9 mm wide, 5–7 mm thick, obovoid, cuneate at base, the body 5 mm wide, compressed, narrowly obovoid above the short cuneate base, softly white pilosulous throughout, the upper 2/3 with several ridges and covered by numerous lobes 1.5–2 mm long, spatulate, rigid, stramineous, these densely white catenulate capitate glandular hirsutulous; seeds 7 mm long, 4 mm wide, 2.3 mm thick, narrowly ellipsoid, compressed, reddish brown, smooth, shining, the hilum 2.2 mm long, elevated, pale cartilaginous, shaped like two pairs of fat lips in a line.

HOLOTYPE: Hawaiian Leeward Islands, Ocean Island, *Scaevola* "islands" in central plain and near by, 4 m alt., April 18, 1923, E. L. Caum 13 (BISH). Isotype (W).

SPECIMENS EXAMINED: Hawaiian Leeward Islands, all from Laysan Island and all in (BISH), 6/15/62, J. W. Beardsley; May 1911, W. A. Bryan no. B; Feld, 4.7.1896, *Schauinsland*; vine climbing over brush, Aug. 10, 1930, G. P. Wilder 473.

DISCUSSION: Contrasts with the closest relative, *S. Caumii* St. John, are given under that species. With adequate collections from both islands, no morphological basis has been found for separating the plants of Laysan from those of Kure (Ocean) Island. Since the anthocarps are hairy and viscid, they may well be transplanted by the visiting or nesting sea birds from one to another island.

The only hint of a difference is a suggestion in the collector's field notes. For his Ocean Island collection Caum recorded: "Flowers tiny, yellow, in large open panicles." Since the pistillate flowers are in small green heads, this field note must apply to the long panicles of staminate flowers, which hence are said to be yellow.

W. A. Bryan collected two species of *Sicyos* on Laysan Island. The first one he marked no. A, and called it the "white blossom." This indicates that the staminate flowers were white, in this first species, here described as *S. laysanensis*. He also collected the second species

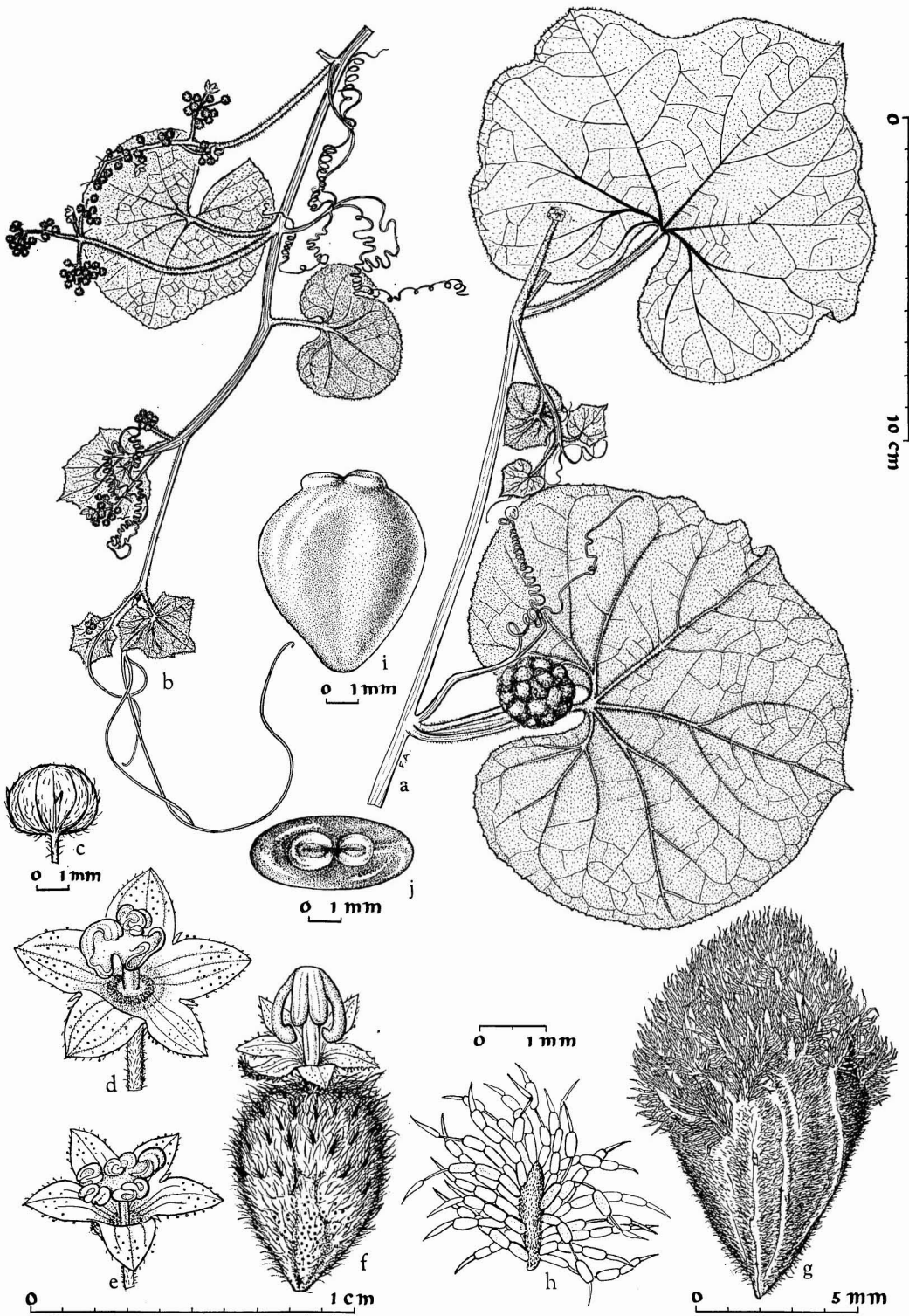
on Laysan, and marked it no. B, and called it the "Green pea colored blossom." This sounds like a clear color distinction, but on analysis it is not very clear. Did Bryan mean that the staminate flowers were the color of fresh or canned green peas, or did he mean that the flowers were of the same color as the blossoms of *Pisum sativum*? Its blossoms are generally white, but the petals actually are from rose to violet to dark purple violet, blending to white or greenish white. Of these various possibilities, the more likely one is that the Laysan species, represented by Bryan no. B, has bright green staminate flowers. Even so, no definite basis has been found for separating these Laysan collections from the similar ones found on Ocean Island.

Sicyos Caumii sp. nov. (sect. *Cladocarpa*)

Fig. 4

DIAGNOSIS HOLOTYPE: Liana herbacea scandens est, novellis hirsutis capitati-glandulosis catenulatis, caulibus angulosis stramineis remote hirsutis, internodis 3–12 cm longis, cirrhis ad petiolos lateralibus 3–5-ramosis, pedunculo 20–45 mm longo compresso anguloso hirsutulo capitati-glanduloso, ramis gracilibus hirsutulis capitati-glandulosis, laminis 6–12 cm longis 6.5–14.7 cm latis reniformibus palmatim vadosiore 5-lobatis lobis 1/10 ad centrum extensis sinibus latis vadosis 5–7 mm profundis apice subito breve acuto sinu basali profundo U-formato sed angusto et fere ocluso marginibus subintegris sed in apicibus venulis umbonatis firme chartaceis supra obscure viridibus et scabris hirsutis cum basibus pustulatis albis infra pallide viridibus et densiter hirsutulis capitati-glandulosis basibus albis pustulatis, paniculis masculis 8–13 cm longis, pedunculis 5–8.5 cm longis angulosis hirsutis capitati-glandulosis catenulatis, rhachidi et pedicelis densiter hirsutulis capitati-glandulosis catenulatis, pedicelis 3–6 mm longis, alabastris masculis 2.5–2.8 mm diametro oblate globoso dense hirsutulo capitati-glanduloso, lobis calycis 0.2 mm longis subulatis, floribus majoribus in flore cum periantho 7 mm diametro rotato intra puberulo capitati-glanduloso, tubo

FIG. 4. *Sicyos Caumii* St. John, from holotype. a, Fruiting branch, $\times \frac{1}{2}$; b, young shoot, $\times \frac{1}{2}$; c, staminate bud, $\times 5$; d, older staminate flower with 3 anthers; $\times 5$; e, younger staminate flower, with 5 anthers, $\times 5$; f, pistillate flower and ovary, $\times 5$; g, anthocarp, $\times 5$; h, anthocarp lobe with hairs, $\times 10$; i, seed, lateral view, $\times 5$; j, seed with hilum, apical view, $\times 5$.



in radio 1.8 mm longo, lobis 5 inaequalibus eis 4 majoribus 2.2 mm longis late ovatis trinervosis illo minori 1.8 mm longo lanceolato obtuso, columna staminalis 1 mm longa glabra in apice trifurcata furco quoque lato divergenti cum anthera 1.3 mm longo curvata, floribus minoribus 5.6 mm diametro rotato, 5 lobis 1.8 mm longis simulantibus late ovatis, columna staminalis 0.7 mm longa in apice cum 5 antheris 0.4 mm longis late ellipsoideis, inflorescentia foeminali 15–45 mm longa solitaria, pedunculo 8–35 mm longo hirsuto catenulato capitati-glanduloso, floribus fere 25 capitatis, capitula in flore 8 mm diametro in fructu 25 mm diametro, ovario 2.7 mm longo villosa, corollis 3.2 mm diametro epigynis luteis rotatis extra sparse hirsutulis et copiose puberulis obscuris capitati-glandulosis, lobis ovatis 1.3 mm longis trinervosis extra obscure puberulis capitati-glandulosis, stylo 1 mm longo glabro, 3 lobis stigmatis 1–1.2 mm longis ellipticis crassis cernuis, anthocarpiis 10–12 mm longis 6–9 mm latis 4–5 mm crassis obovoideis vel oblanceoloideis basi cuneata corpore 5.5–6.5 mm lato lignoso omnino mollior puberulo albo parte 2/3 supera cum fugis acribus compluribus eis cum lobis ligulatis 1.5 mm longis rigidis stramineis adscendentibus ferentibus eis hirsutis glandulosis catenulatis, semine 6.5–7 mm longo 5 mm lato 2.5 mm crasso late obovoideo compresso sublutei-brunneo laevi lucido, hilo 2.5–2.7 mm longo elevato cartilagineo jugis labiis duobus in linea simulantibus.

DIAGNOSIS OF HOLOTYPE: Climbing herbaceous vine; young shoots capitate glandular catenulate hirsute; stems angular, stramineous, remotely hirsute; internodes 3–12 cm long; tendrils lateral to the petiole base, 3–5-forked, the stalk 20–45 mm long, flattened, several-angled, capitate glandular hirsutulous, the slender forks spiralling, capitate glandular hirsutulous; blades 6–12 cm long, 6.5–14.7 cm wide, reniform, very shallowly palmately 5-lobed, the lobes extending about 1/10 way to the center, the broad shallow sinuses 5–7 mm deep, the apex abruptly shortly acute, the deep basal sinus U-shaped but narrow and nearly closed, the margins subentire but umbonate at the excurrent vein ends, texture firm chartaceous, above dark green and scabrous from the hirsute pubes-

cence from white pustulate bases, below pale green and densely capitate glandular hirsutulous from white pustulate bases; staminate panicles 8–13 cm long; peduncle 5–8.5 cm long, angled, and capitate glandular catenulate hirsute; rhachis and pedicels densely capitate glandular catenulate hirsutulous; pedicels 3–6 mm long; buds 2.5–2.8 mm in diameter, oblate globose, densely capitate glandular hirsutulous; calyx lobes 0.2 mm long, subulate; flowers dimorphic, the larger ones with perianth in anthesis 7 mm in diameter, rotate, within capitate glandular puberulous, the tube 1.8 mm in radius, the 5 lobes unequal, the 4 larger ones 2.2 mm long, broadly ovate, 3-nerved, the one smaller one 1.8 mm long, lanceolate, obtuse; staminal column 1 mm long, glabrous; the apex with 3 widespreading broad forks, each bearing one anther 1.3 mm long, curved; the smaller type of flowers 5.6 mm in diameter, rotate, the 5 corolla lobes 1.8 mm long, similar, broadly ovate; stamen column 0.7 mm long, at apex bearing 5 anthers 0.4 mm long, broadly ellipsoid; pistillate inflorescence 15–45 mm long, solitary in an axil or together with a staminate one; peduncle 8–35 mm long, capitate glandular catenulate hirsute; pistillate flowers about 25 to a head, this 8 mm in diameter in flower but 25 mm in diameter in fruit; ovary 2.7 mm long, villous; corolla epigynous, yellow, 3.2 mm in diameter, rotate, without sparsely hirsutulous, and abundantly dark capitate glandular puberulous, the ovate lobes 1.3 mm long, 3-nerved, and dark capitate glandular puberulous without; style 1 mm long, glabrous; the 3 stigmatic lobes 1–1.2 mm long, elliptic, thick, cernuous; anthocarp 10–12 mm long, 6–9 mm wide, 4–5 mm thick, obovoid or oblanceoid from a cuneate base, the body 5.5–6.5 mm wide, woody, softly white puberulent throughout, the upper 2/3 with several sharp ridges which bear numerous rigid ligulate lobes 1.5 mm long, stramineous, ascending, and these densely glandular catenulate hirsute; seed 6.5–7 mm long, 5 mm wide, 2.5 mm thick, broadly obovoid, compressed, light yellowish brown, smooth, shining, the hilum 2.5–2.7 mm long, raised, cartilaginous, shaped like two pairs of fat lips in a line.

HOLOTYPE: Hawaiian Leeward Islands, Pearl and Hermes Reef, Seal Island, e. half of higher

part of island, 3 m alt., April 27, 1923, *E. L. Caum* 53 (BISH).

SPECIMENS EXAMINED: Hawaiian Leeward Islands, Pearl and Hermes Reef, Southeastern Islet, on e. side, 2 m alt., April 26, 1923, *Caum* 42 (BISH); ditto, Aug. 1930, *P. C. Galtsoff* (US); ditto, in central depression with *Solanum*, *Eragrostis*, and *Boerhavia*, Sept. 17, 1964, *C. R. Long* 2,303, and 2,280 (Univ. Hawaii); ditto, sea level, May 18, 1923, *G. P. Wilder* 4 (BISH); ditto, central plain, with *Tribulus*, *Boerhavia*, *Solanum nelsoni*, 9–10 ft alt., Aug. 18–20, *A. L. Young* 117; 119; 121 (Univ. Hawaii).

DISCUSSION: The nearest relative of *S. Caumii* is *S. atollensis* St. John of Kure and Laysan islands, a species with the staminate bud closely puberulous; pistillate corolla sparsely puberulous without; anthocarp body softly white pilosulous; seed 7×4 mm, narrowly ellipsoid; tendrils 3-forked. *S. Caumii* has the staminate buds densely capitate glandular hirsutulous; pistillate corolla sparsely hirsutulous and abundantly dark capitate glandular puberulous; anthocarp body softly white puberulent; seed $6.5-7 \times 5$ mm, broadly obovoid; tendrils 3–5-forked.

The new epithet is given in honor of the collector, Edward Leonard Caum (1893–1952), assistant forester of the Hawaiian Sugar Planters Experiment Station, Honolulu.

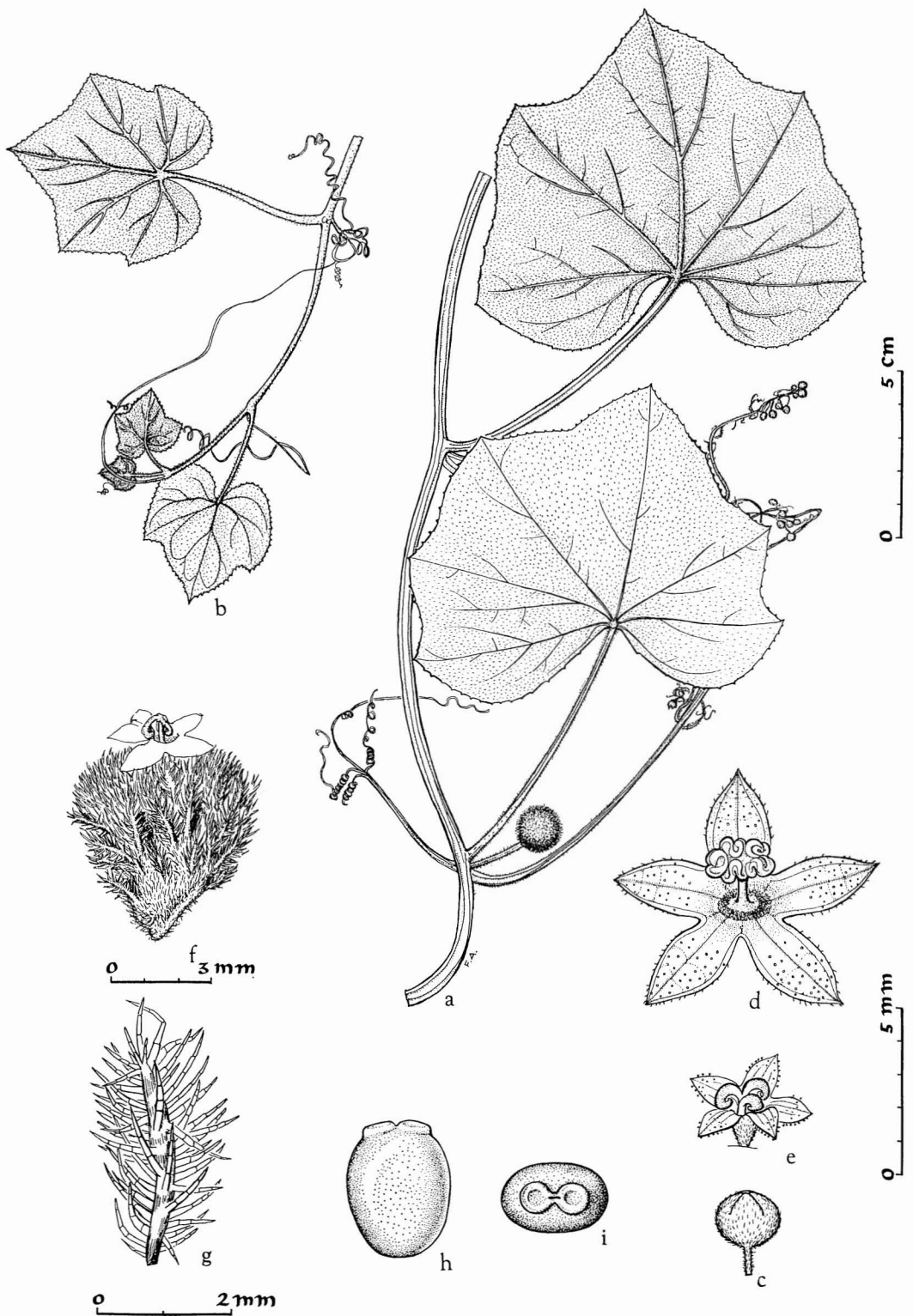
Sicyos Lamoureuxii sp. nov. (sect. *Cladocarpa*)

Fig. 5

DIAGNOSIS HOLOTYPE: Liana herbacea repens vel scandens pilosula pilis plerumque persistentibus est, caulibus stramineis angulosis, internodis 5.5–13 cm longis, cirrhii in nodis lateralibus trifurcatis pedunculo 17–52 mm longo compresso plurianguloso capitate glandulose pilosulo furcis gracilibus spiris formantibus sparse capitate glandulose pilosulis, petiolis 3.5–9 cm longis pluriangulosis minute glandulose pilosulis, laminis 6–10 cm longis 6.5–11.6 cm latis reniformibus ad cordatis vadosiore palmatis 5-lobatis lobis $1/10$ ad centrum extensis sinibus latis vadosis 6–8 mm profundis apice subito acuto sinu basali profundo U-formato margine subintegrato sed in apicibus nervulis excurrentibus umbonatis, lamina firme chartacea supra obscure viridi scabro capitate glandulose hirsutulo basi-

bus pustulatis infra pallide viridi et denister glandulose capitate hirsutula basibus pustulatis, paniculis masculis 12–17 cm longis capitate glandulose hirsutulis densiter supra, pedunculo 5.5–12 cm longo, pedicelis 3–10 mm longis minute glandulosi-pilosulis, alabastro 2–2.3 mm diametro oblate globoso densiter capitate glandulose pilosulo, perianthio in flore 7 mm diametro rotato licet albo intra capitate glandulose puberulo tubo 1.5 mm in radio, 5 lobis 2–2.5 mm longis 1.5 mm latis ellipticis subacutis trinervosis, columna staminalis 1 mm longa, 5 antheris 1.5 mm longis curvatis, inflorescentia foeminea 18–30 mm longa in nodo laterali, pedunculo 14–22 mm longo capitate glandulose hirsutulo, floribus foemineis fere 20 in capitulo in flore 10 mm diametro sed in fructu 13–15 mm diametro, ovario 4 mm longo obovoideo dimidio supero ex lobis longe pubescentibus occluso, corolla epigyna 3.5 mm diametro tubo 1.5 mm diametro infundibuliformi intra breve capitate glandulose puberula extra cum lobis lanceolatis compluribus 1–1.5 mm longis et villosis ad eos ovarii simulantibus, 5 lobis corollae 1.5 mm longis et latis late ovatis subacutis trinervosis et perspicue capitate glandulose puberulis, stylo 2 mm longo glabro, 3 lobis stigmatis 2.5 mm longis 0.3 mm latis recurvatis, anthocarpiis 6–7 mm longis et latis infra cuneatis supra hemisphaericis corpore 2–3 mm lato albi-puberulento obovoideo cuneato compresso excepta in basi omnino cum lobis linearibus vel oblanceolatis rigidis ocllusis eis cum pilis 0.5–1 mm longis, semine 4.2 mm longo 3.3 mm lato 2.2 mm crasso ellipsoideo compresso laevi obscure brunneo lucido, hilo 1.7 mm longo elevato cartilagineo jugis binis labiis in linea simulantibus.

DIAGNOSIS OF HOLOTYPE: Herbaceous vine, trailing or climbing; young shoots sparsely pilosulous and the hairs mostly persisting; stems stramineous, angular; internodes 5.5–13 cm long; tendril lateral to the petiole base, 3-forked, the stalk 17–52 mm long, flattened, several-angled, capitate glandular pilosulous, the slender forks spiralling, sparsely capitate glandular pilosulous; petioles 3.5–9 cm long, several-angled, minutely glandular pilosulous; blades 6–10 cm long, 6.5–11.6 cm wide, reniform to cordate, very shallowly but perceptibly palmately 5-lobed, the lobes extending about $1/10$ way to the



center, the broad shallow sinuses 6–8 mm deep, the apex abruptly acute, the deep basal sinus U-shaped, the margin subentire but umbonate at the excurrent veinlet ends, texture firm chartaceous, above dark green, and scabrous by the capitate glandular hirsute pubescence from pustulate conic bases, below pale green and densely capitate glandular hirsutulous from white pustulate bases; staminate panicles 12–17 cm long, capitate glandular hirsutulous, densely so above; peduncle 5.5–12 cm long; pedicels 3–10 mm long, minutely glandular pilosulous; calyx lobes wanting; bud 2–2.3 mm in diameter, oblate globose, densely capitate glandular pilosulous; perianth in anthesis 7 mm in diameter, rotate, apparently white, within capitate glandular puberulous, the tube 1.5 mm in radius, the 5 lobes 2–2.5 mm long, 1.5 mm wide, elliptic, subacute, 3-veined; staminal column 1 mm long; the 5 anthers 1.5 mm long, spirally curved; pistillate inflorescences 18–30 mm long, solitary, lateral at a node or together with a staminate one; peduncle 14–22 mm long, capitate glandular hirsutulous; pistillate flowers about 20 to a head, this 10 mm in diameter in flower but 13–15 mm in diameter in fruit; ovary 4 mm long, obovoid, the upper half obscured by long hairy lobes; corolla epigynous, 3.5 mm in diameter, the tube 1.5 mm in diameter, funnellform, short capitate glandular puberulous within, without with several lanceolate lobes 1–1.5 mm long and villous like those of the ovary, the 5 corolla lobes 1.5 mm long and wide, broadly ovate, subacute, 3-nerved, and conspicuously capitate glandular puberulous; style 2 mm long, glabrous; the 3 stigmatic lobes 2.5 mm long, 0.3 mm wide, recurved; anthocarps 6–7 mm long and wide, cuneate below, hemispheric above, the body 2–3 mm wide, white puberulent, obovoid, cuneate, compressed, all but the base covered with linear to oblanceolate lobes, rigid, hirsutulous with hairs 0.5–1 mm long; seed 4.2 mm long, 3.3 mm wide, 2.2 mm thick, ellipsoid, compressed, smooth, dark brown, shining, the hilum 1.7 mm long, raised, cartilaginous, shaped like two pairs of open lips in a line.

HOLOTYPE: Hawaiian Leeward Islands, Kure Island, near end of runway on w. side, Sept. 12, 1961, C. Lamoureux 1,901 (BISH); and nos. 1,899, 1,900, 1,902–3 are evidently isotypes (BISH).

SPECIMENS EXAMINED: Hawaiian Leeward Islands, Kure Island, central open plain, inner edge, climbing on *Scaevola*, Oct. 3–9, 1959, H. F. Clay (BISH).

Lisiansky Island: w. end in sand, growing over *Scaevola*, Sept. 18, 1964, C. R. Long 2,314, 2,317, and 2,356 (Univ. Hawaii); ditto, n. end, Aug. 22, 1964, A. Young 135 (Univ. Hawaii).

DISCUSSION: *S. Lamoureuxii* is a member of the section *Cladocarpa*, as is its closest relative, *S. Caumii* St. John, of Pearl and Hermes Island, a species with the staminate corolla lobes 1.8–2.2 mm long, broadly ovate; anthocarps 10–12 mm long, the upper part obovoid; seed $6.5-7 \times 5$ mm, broadly obovoid; young shoots hirsute. *S. Lamoureuxii* has the staminate corolla lobes 2–2.5 mm long, elliptic; anthocarps 6–7 mm long, the upper part hemispheric; seed 4.2×3.3 mm, ellipsoid; young shoots pilosulous.

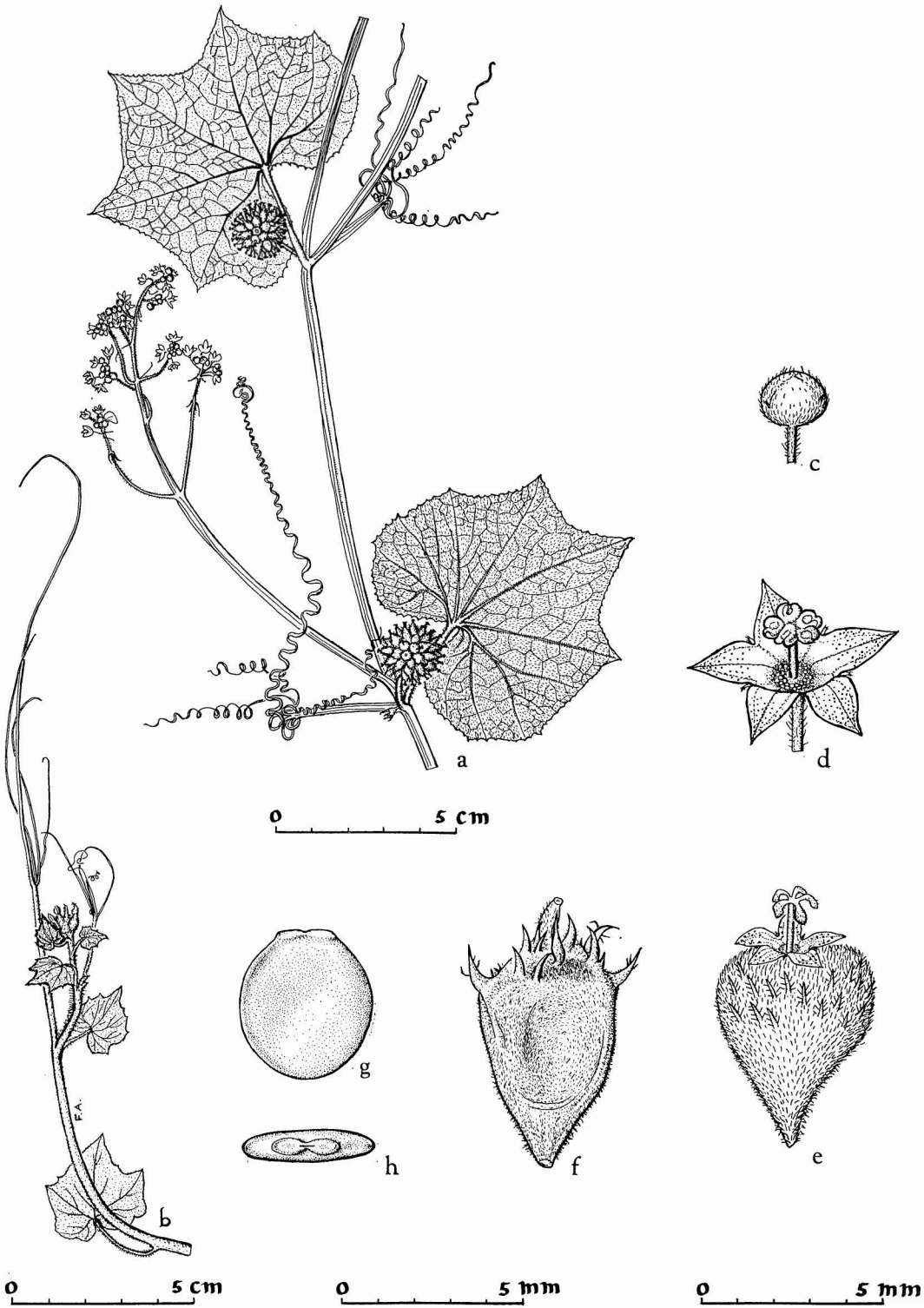
The new epithet is given in honor of the collector, Dr. Charles Harrington Lamoureux (1933–), professor of botany at the University of Hawaii.

Sicyos semitonsus sp. nov. (sect. *Cladocarpa*)

Fig 6

DIAGNOSIS HOLOTYPE: Liana herbacea repens vel scandens est, novellis densiter capitate villosis albis catenulatis, caulibus maturis acriter 6-angulosis viridibus vel subrubris et cum pilis simulantibus sed minus densis, internodis 10–20 cm longis cirrhii in nodis lateralibus 4–5-furcatis pedunculo 28–105 mm longo acriter anguloso compresso capitate glandulose pilosulo catenulato furcis spiralibus et cum pilis simulantibus, petiolis 3–14.5 cm longis angulosis et capitate glandulose divergente pilosulis albis, laminis 7–12 cm longis et latis reniformibus vadose palmatim 5-lobatis lobis $1/5-1/4$ ad centrum extensis sinibus latis vadosis 8–15 mm

FIG. 5. *Sicyos Lamoureuxii* St. John, from holotype. a, Fruiting branch, $\times 1/2$; b, young shoot, $\times 1/2$; c, staminate bud, $\times 5$; d, staminate flower, $\times 5$; e, pistillate flower, $\times 5$; f, anthocarp, $\times 5$; g, anthocarp lobe with hairs, $\times 10$; h, seed, lateral view, $\times 5$; i, seed with hilum, apical view, $\times 5$.



profundis apice subacuminato sinu basali U-formato vel late ita et aperto marginibus cum venulis excurrentibus denticulatis, laminis chartaceis supra obscure viridibus dense scabris hispidulis ex basibus pustulatis infra densioribus hispidulis, paniculis masculis 15–20 cm longis sparse capitate glandulose pilosulis, pedunculo 8–10 cm longo, pedicelis 3–5 mm longis filiformibus, alabastris 1.5–2 mm diametro oblate subglobosis viridibus capitate glandulose puberulentis, lobis calycis 0.1–0.2 mm longis subulatis, perianthio masculo in flore 5 mm diametro rotato intra et extra capitate glandulose puberulo, tubo 1.3 mm in radio, disco centrali glanduloso 1 mm diametro, 5 lobis corollae 1.7–2 mm longis 1.5–1.8 mm latis deltoideis trinervis, columna staminalis 1–1.3 mm longa, 5 antheris 0.8 mm longis curvatis, inflorescentia foeminali solitaria in nodo laterali, pedunculo in flore 13–22 mm longo sed in fructu 15–40 mm longo, floribus foeminis 24–30 in capitulo eo in flore 12 mm diametro sed in fructu 18–21 mm diametro, ovario in flore 4 mm longo dense puberulo, perianthio epigyno 4 mm diametro, tubo 2 mm diametro infundibuliformi extra divergenti-puberulo albo, 5 lobis corollae 1.5 mm longis 1.5–1.6 mm latis late ovatis sed ad apicem deltoideis intra 5-nervis et dense capitate glandulose puberulentis, stylo 1.3 mm longo glabro, 5 (vel 3) lobis stigmatis 0.7–0.9 mm longis ligulatis sed ad apicem ovatis acutis.

DIAGNOSIS OF HOLOTYPE: Herbaceous vine, trailing or climbing; young shoots densely white, capitate glandular, catenulate villous; mature stems sharply 6-angled, green or slightly reddish, and similarly but only moderately villous; internodes 10–20 cm long; tendrils lateral to a petiole base, 4–5-forked, the stalk 28–105 mm long, sharply angled, flattened, white, capitate glandular, catenulate pilosulous, the slender forks spiralling and similarly pilosulous; petioles 3–14.5 cm long, angled, and capitate glandular spreading while pilosulous; blades 7–12 cm long and wide, reniform, shallowly palmately 5-lobed, the lobes extending 1/5–1/4 way to center, the broad shallow sinuses 8–15 mm deep, the apex

subacuminate, the basal sinus U-shaped or widely so and open, the margin minutely denticulate by excurrent umbonate veinlet tips, texture chartaceous, above dark green, closely scabrous hispidulous from white pustulate bases, below similarly but more densely hispidulous; staminate panicles 15–20 cm long, sparsely capitate glandular pilosulous; peduncle 8–10 cm long; pedicels 3–5 mm long, filiform; bud 1.5–2 mm in diameter, oblate subglobose, green, sparsely capitate glandular puberulent; calyx lobes 0.1–0.2 mm long, subulate; staminate perianth in anthesis 5 mm in diameter, rotate, within and without capitate glandular puberulous, the tube 1.3 mm in radius, and with a central glandular disk 1 mm in diameter, the 5 lobes 1.7–2 mm long, 1.5–1.8 mm wide, deltoid, 3-nerved; staminal column 1–1.3 mm long; the 5 anthers 0.8 mm long, curved; pistillate inflorescences solitary, lateral to a petiole base; peduncle 13–22 mm long in flower, but 15–40 mm long in fruit, mostly together with a staminate inflorescence at a node; pistillate flowers 24–30 to a head, this 12 mm in diameter in flower, but 18–21 mm in fruit; ovary in flower 4 mm long, fuzzy hairy; perianth epigynous, 4 mm in diameter, the tube 2 mm in diameter, funnelform, without divergent white puberulous, the 5 corolla lobes 1.5 mm long, 1.5–1.6 mm wide, broadly ovate but deltoid towards the tip, within 5-nerved and abundantly capitate glandular puberulous; style 1.3 mm long, glabrous, the 5 (or 3) stigmatic lobes 0.7–0.9 mm long, ligulate, then near the tip ovate and acute.

EXPANDED DESCRIPTION: Anthocarps 9–10 mm long, 5–6 mm wide, cuneiform, the body 3 mm wide, oblanceoloid, angled, the lower 1/3 densely ascending white pilosulous, the upper part bearing numerous flat, linear oblanceolate green-tipped rigid ascending lobes 3–4 mm long, these spaced viscid puberulous, but the hairs not concealing the lobes; the body of the anthocarp with the pericarp hard, fibrous, almost woody, closely enclosing the solitary pendulous seed; seed 6 mm long, 4.2 mm wide, compressed obovoid, smooth, shining tawny,

FIG. 6. *Sicyos semitonsus* St. John, from holotype. *a*, Flowering branch, $\times \frac{1}{2}$; *b*, young shoot, $\times \frac{1}{2}$; *c*, staminate bud, $\times 5$; *d*, staminate flower, $\times 5$; *e*, pistillate flower and ovary, $\times 5$; *f*, anthocarp, $\times 5$; *g*, seed, lateral view, $\times 5$; *h*, seed with hilum, apical view, $\times 5$.

the hilum 2.7 mm long, like two pairs of slightly open lips in a line, separated.

HOLOTYPE: Hawaiian Leeward Islands, Laysan Island, n. w. end of the lagoon in a flat area with *Ipomoea*, 19 Sept. 1964, C. R. Long 2,370 (BISH). Other collections with the same data, Long 2,365; 2,368; and 2,369 (Univ. Hawaii) are evidently duplicates and thus isotypes.

DISCUSSION: *C. semitonsus* is a member of the section *Cladocarpa*, as is its closest relative, *S. Lamoureuxii* St. John, of Lisianski and Kure islands, a species with the staminate perianth 7 mm in diameter, the lobes 2–2.5 mm long, elliptic; anthocarps 6–7 mm long, the body cuneate hemispheric; seed 4.2×3.3 mm, ellipsoid. *S. semitonsus* has the staminate perianth 5 mm in diameter, the lobes 1.7–2 mm long,

deltoid; anthocarps 9–10 mm long, the body oblanceoloid; seed 6×4.2 mm, obovoid.

The new epithet is formed from the Latin *semi-*, half; and the participle *tonsus*, shaven, and it is given with reference to the fruits which lack the abundant long hairs, but have retained some short hairs, and look half shaven.

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